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CHRISTOPHER PARADIES, PH.D.
FOWLER WHITE BOGGS BANKER, P.A.
501 E KENNEDY BLVD, STE. 1900
TAMPA, FL 33602

EXAMINER	
GREEN, RICHARD R	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,982	MUELLER ET AL.	
	Examiner	Art Unit	
	Richard R. Green	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-12,14,15 and 21-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-12,14,15 and 21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/30/2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/8/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the insulation braces attached in vertical position of claim 12 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims **1-3, 10, 23, 25 and 29** are objected to because of the following informalities: the term "burn-through-proof" is awkward and does not appear to reflect what Applicant intends to claim as the invention. Perhaps if the elements were claimed to be made of a material which is fire resistant up to at least the open air burning temperature of jet fuel (550 Fahrenheit / 288 Centigrade), the limitations would more accurately reflect the invention. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims **1-12, 14, 15 and 21-30** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims **1-3, 10, 23, 25 and 29,** the term "burn-through-proof" as argued by Applicant appears to indicate that plastic is not "burn-through-proof", yet in fig. 5a parts of the attachment elements are indicated to be made from polyamide (indicated in lines 27-29 of page 1 of the specification to be a material used in prior art attachment elements), and lines 10-12 of page 3 of the specification indicate that the "burn-through-proof" attachment elements may be made from plastics with a "high

melting point". If the plastic elements of Smith are not "burn-through-proof", it is not understood how the plastic elements of Applicant are "burn-through-proof". Speaking in absolutes, nothing is fireproof, and Applicant has not enabled the "burn-through-proof" elements of the present invention to, for example, pass through the sun without fire damage.

Claim **15** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Paragraph 51 of the specification allows for the casing to be made from plastic, but does not specify that it is a plastic having a lower thermal conductivity than the material of the disc-shaped core element.

Claims **29 and 30** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no support in the disclosure for retainers comprising a disc of a first burn-through-proof material having a central hole and a first surface and a second surface opposite of the first surface and a shaped flange encasing at least a portion of the disk and extending from the disk in the direction of one of the first surface or the second surface, the shaped flange being of a second material, different than the first material. This is considered to constitute new matter.

Figs 6 and 6a appear to show a disk having a central hole, but it is uncertain where the shaped flange extending from the disk in the direction of one of opposing sides is, and the specification does not account for the flange being made from a different material.

Claims listed in the heading and not addressed above are rejected for being dependent upon a rejected base claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1-12, 14, 15 and 21-30** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims **1-3, 10, 23, 25 and 29,** the term "burn-through-proof" has been applied to objects which comprise plastics, and yet Applicant has argued that plastics are not "burn-through-proof". Applicant has not particularly pointed out nor distinctly claimed the subject matter which is regarded as the invention if materials which Applicant does not believe to be "burn-through-proof" are claimed to be "burn-through-proof".

Regarding claim **1,** in lines 34-35 of the claim (on the marked copy), in the limitation, "and the one of the pair of fuselage insulation packages being attached by the hole in the first flat insulation end section is retained on the opposite side of the rib attachment region" it is not clear how the package is attached by a hole, since a hole is a negative space in a material. Also, it seems probable from later claims that the second appearance of "the opposite side of the rib attachment region" near the end of

this claim is not necessarily meant to refer to the previous introduction of “the opposite side of the rib attachment region” for antecedent basis, but rather a side of the rib attachment region opposing the overlapping insulation packages; however, this is not particularly clear in the claim.

Regarding claim **2,** in line 4 two ribs are claimed to be arranged “at a specified distance," but it is not particularly clear what this distance is – are they arranged a distance from each other, a distance from the longitudinal axis of the aircraft, or something else? Additionally, in line 8, the rib attachment region is claimed to be arranged “below a longitudinal side” of the ribs, the longitudinal side being adjacent to the attachment region. Strictly speaking, the location of the rib attachment region has been used here to define the location of the rib attachment region – which is not a distinct definition – and this would be alleviated by stating that the region is arranged adjacent to and below a longitudinal side of each of the ribs. However, it is also unclear what a “longitudinal side” of a rib would be, and thus what direction would be below one. Is the longitudinal side one facing a longitudinal axis of the fuselage, a side arranged perpendicular to the longitudinal axis of the fuselage, or a side that is longer than other sides of the rib, being longitudinal with respect to the rib? Virtually any side of the rib could reasonably be described as longitudinal with respect to either itself or the fuselage. Finally, what is below this side? Ribs are arranged circumferentially and what is on the bottom of the rib at the top of the fuselage is at the top of the rib on the bottom of the fuselage. For purposes of examination, "below" is considered from the rib at the

top of the fuselage, and the longitudinal side is one perpendicular to the longitudinal axis of the fuselage.

Regarding claim **3,** it is not clear what is "arranged so as to be substantially congruently aligned." For purposes of examination, the three holes recited must be so arranged.

Regarding claims **5 and 12,** it is not clear what comprises a "plastic-like material." What properties of plastic must the casing have? Is it like plastic in that it is formed of long polymer chains (such as wood), in that it can be injection molded (like glass), or in that it is made of hydrocarbons (like diesel)? Or must it serve a similar function to plastic, but not necessarily share material similarities?

Regarding claim **10,** it is not clear what exactly is being joined by the insulation jacket, the disc-or-ring elements, or the second attachment element, and in either case, what they are joined to. Joined together? Both, joined to one another?

Regarding claim **11,** there is insufficient antecedent basis for the limitations "the first insulation disc" (line 3), "the dome-shaped casing" (lines 5, 6) or "the first attachment element" (line 6) in the claim. The first attachment element is possibly the "burn-through-proof" attachment element of claim 1, the dome shaped casing is introduced in claim 8 upon which this claim is no longer dependent, and there is no prior reference to a first insulation disc.

Regarding claim **12,** it is unusual and confusing to refer to radial arms as being "in vertical position". What this claim suggests is two rings with braces running like bars

on a cage, reminiscent of a sewer grate, which configuration is not shown in the drawings.

Regarding claim **24,** it is not clear how the first retainer can cover the hole in both flat insulation sections, when in claim 1, at least one of those flat insulation sections is required to be retained on “the opposite side of the rib attachment region”, wherein "the opposite side" has previously been introduced as the opposite side of the region from the first retainer end, and so the first retainer must be on the opposite side of the attachment region from the hole which it is required to cover. For purposes of examination, the retainers must both cover holes in the insulation package.

Claims listed in the heading and not addressed above are rejected for being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1-3, 23 and 24** are rejected under 35 U.S.C. 102(b) as being anticipated by USPN-3567162 to Lea.

Regarding claim **1,** Lea teaches an insulation package system for insulating an interior of an aircraft, the aircraft comprising:

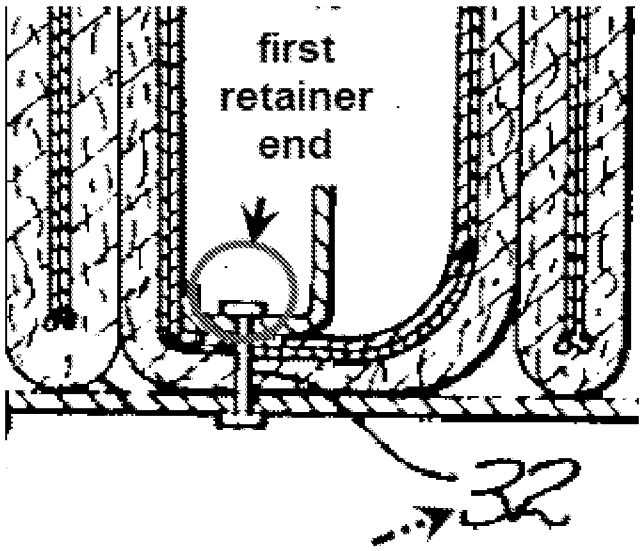
a fuselage with stringers stiffening panels of an outer skin of the fuselage (figs. 1 and 2, stringers at 22 stiffen panels 23) and ribs arranged perpendicular to the longitudinal axis of the aircraft (figs. 1 and 2, ribs at 20), where the ribs are attached to the stringers at one end (figs. 1 and 2, as where left numeral 20 points in fig. 1) and unattached at another end, culminating in an integrated rib carrier (fig. 2: rib 20 ends in a 90 degree bend, which is a rib carrier), and the ribs further having a rib attachment region located between the attached end and the rib carrier and further having a hole through the rib attachment region (fig. 1, element 32 is received through a hole in the topmost portion of rib 20, which is located between the lip shown to the left of element 32 and the attached end shown touching the stringer 22); and

a pair of fuselage insulation packages having an elongated package shape and being arranged longitudinally with respect to the fuselage and resting against a support surface of the stringers (fig. 1, at 17; another is shown to either side, both are elongate in shape – see particularly fig. 3 – and arranged longitudinally while resting against a surface of the stringers 22 as in fig. 1) and are attached to the fuselage (fig. 1, packages 17 are attached to the rib 20 through element 32, which rib being part of the fuselage), each comprising:

first and second flat end sections on opposing sides of the package, the second end shorter than the first (fig. 1: first end on left, second end on right; in light of col. 4, lines 4-7 where the packages overlap in the region of the attachment element 32, the packages are considered to terminate near the attachment element 32, and as such in fig. 1, the left end of insulation package 17 is shown to be longer than the right end),

arranged to overlap in a region of attachment such that an attachment element passes through the hole in the rib attachment region and both the first end of one of a pair of packages and the second end of the other of a pair of packages, both packages having holes formed in both ends where the attachment element passes through (fig. 1, at and around element 32 and in light of col. 4, lines 4-7); and

a foil completely enclosing a fire-stop insulation or barrier layer (fig. 1, foil at 16, flame resistant insulation at 10; col. 3, lines 54-60 teaches that the insulation 10 is fire-stop, which is considered to comprise "burn-through-proof"); and



a “burn-through-proof” attachment element having first and second retainer ends at opposing ends (fig. 1, particularly enlargement above: first retainer end is the fastener circled and labeled, second retainer end is the spacer 32 – the attachment element is the combination of the two pieces and is considered to be “burn-through-proof” in the same way that waterproof watches are only waterproof to a certain depth and fireproof materials are only fireproof to a certain temperature and duration of exposure to

temperature) and being disposed through the hole in the rib attachment region such that a retainer end is located on either of opposing sides of the rib attachment region (fig. 1: element 32 is arranged on an opposing side of the rib from the side on which the displayed fastener is arranged) and the first retainer end attaches the first end of one insulation package and the second end of another insulation package to the rib attachment region through holes located in both ends such that the ends overlap (fig. 1, at and around element 32 and in light of col. 4, lines 4-7), and one of the insulation packages in the attached pair is retained on the opposite side of the rib attachment region by passing the second retainer end through a hole formed in the other insulation package of the attached pair (fig. 1, at and around element 32, in light of col. 4, lines 4-7: as the sides of the rib attachment region were initially introduced, “the opposite side” is the same side of the rib attachment region that the second retainer end is located which is opposite the side that the first retainer end is located, and in fig. 1 one of the attached pair of insulation packages is retained on the same side of the rib attachment region as the second retainer end 32 by the element 32 which passes through corresponding holes in both the first end of one insulation package and the second end of the other insulation package; it appears that three holes are required here, and the third may be considered to be the hole through layer 10 of the first end on one insulation package, wherein the first hole is in the first end and would be the hole through layer 16 of the same insulation package, and the second hole is through layer 16 of the second end of the other insulation package);

Regarding claim **2,** Lea teaches an insulation package arrangement for insulating an interior of an aircraft, the fuselage comprising:

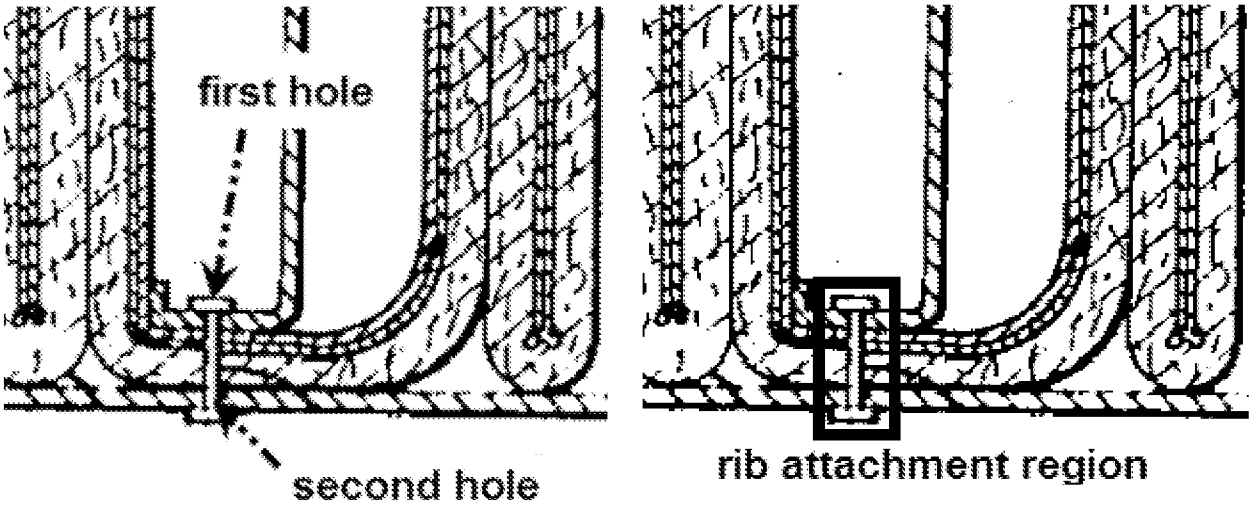
stringers for stiffening panels of an outer skin of the fuselage (figs. 1 and 2, stringers at 22 are capable of stiffening outer skin panels 23) and ribs arranged perpendicular to the longitudinal axis of the aircraft at a specified distance (figs. 1 and 2, ribs at 20 are a distance apart), where the ribs are attached to the stringers at one end (figs. 1 and 2, as where left numeral 20 points in fig. 1) and unattached at another end, culminating in an integrated rib carrier (fig. 2: rib 20 ends in a 90 degree bend, which is a rib carrier), and the ribs further having a rib attachment region located below a longitudinal side of each of the ribs adjacent the attachment region (fig. 2, the flat inside edge of the ribs 20 is an attachment region which at the top of the aircraft is below a longitudinal side of the ribs);

at least two fuselage insulation packages having an elongated package shape and being arranged longitudinally with respect to the fuselage and resting against a support surface of the stringers (fig. 1, at 17; another is shown to either side, both are elongate in shape – see particularly fig. 3 – and arranged longitudinally while resting against a surface of the stringers 22 as in fig. 1) and are attached to the fuselage (fig. 1, packages 17 are attached to the rib 20 through element 32, which rib being part of the fuselage), each comprising:

a foil completely enclosing a fire-stop insulation or barrier layer (fig. 1, foil at 16, flame resistant insulation at 10; col. 3, lines 54-60 teaches that the insulation 10 is fire-stop, which is considered to comprise "burn-through-proof") and wherein the packages

are arranged within a space enclosed by interior paneling and panels forming the outer skin of the fuselage (figs. 1 and 2: outer skin panels at 23 and interior paneling at 24);

a “burn-through-proof” attachment element, wherein each of the packages continues with a flat end section such that the packages are attached overlappingly with the “burn-through-proof” attachment element to one of the ribs in the rib attachment region of the respective rib (fig. 1, at and around attachment element 32 and in light of col. 4, lines 4-7; the attachment element 32 has a specific maximum operating temperature where it is no longer capable of acting as an attachment element, and up until that temperature is reached it is considered to be “burn-through-proof” in the same way that waterproof watches are only waterproof to a certain depth and fireproof materials are only fireproof to a certain temperature and duration of exposure to temperature); and

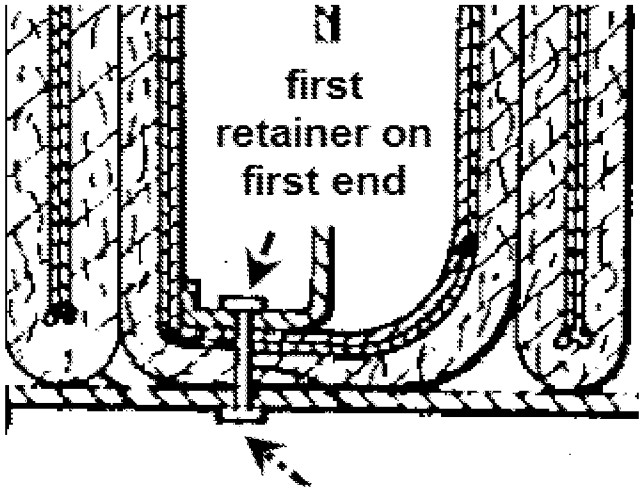


wherein a hole is drilled through the rib attachment region (fig. 1, element 32 is received through a hole drilled in the topmost portion of rib 20, which is located between the lip shown to the left of element 32 and the attached end shown touching the stringer

22), a first hole is formed in a package region of each of the two insulation packages and a second hole is formed in the flat end section of each of the two insulation packages, wherein the first and second holes are retained on opposite sides of the rib attachment region by the "burn-through-proof" attachment element (fig. 1, particularly above enlargement – in fig. 1 this arrangement occurs twice and so a similar arrangement as follows is considered for the other side of the middle insulation package 17 – the first hole is formed in the insulation package through layer 16 on the side of the package closest the skin of the airplane and the second hole is formed in the insulation package through layer 10 on the side of the package closest the interior of the fuselage; the rib attachment region being considered the three dimensional region where the package is attached to the rib – as in the enlargement of fig. 1 above – whereby the first hole and the second hole are retained on opposite sides of the rib attachment region by the attachment element).

Regarding claim **3,** Lea teaches the insulation package arrangement of claim 2, wherein the attachment element comprises a "burn-through-proof" insulation pin (fig. 1, spacer 32 is an insulation pin, which is burn-through-proof for the same reasons the attachment element is), and the attachment element is fed through the first hole, the through hole of a respective rib, and the second hole, when these elements are arranged so as to be substantially congruently aligned (fig. 1, particularly above enlargement regarding claim 2: the attachment element is fed through the first hole, the second hole, and the hole in the respective rib, when these holes are lined up).

Regarding claim **23,** Lea teaches the insulation system of claim 1, wherein the foil encloses both a "burn-through-proof" insulation and a "burn-through-proof" barrier layer which is thicker than the insulation (fig. 1: foil at 16, insulation as 14, barrier layer at 10 is thicker than layer 14).



Regarding claim **24,** Lea teaches the insulation system of claim 1, wherein the attachment element comprises first and second retainers attached to the first and second retainer ends such that each retainer covers a hole in an insulation package (see above enlargement of fig. 1: each retainer, though not directly in contact with the insulation package, nonetheless serves to limit contact with the hole in the package more than the spacer element would alone, covering it like a store awning provides cover without actually resting on an individual's head).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lea in view of USPN-6314630 to Munk et al. (hereafter Munk).

Regarding claims **21 and 22,** Lea teaches the insulation arrangement of claim 1, but fails to teach an additional attachment element comprising a steel or titanium rivet or screw connection element, or a nut made from aramide or a carbon fiber reinforced plastic. However, it is well known in the art to use nuts and bolts to attach ribs to stringers (Munk figs. 6 and 7: stringer at 90 is attached to rib at 220 by the nut/bolt pair at 244; bolts are screw connection elements). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use nuts and bolts to connect the ribs of Lea to the stringers of Lea (Lea fig 2: ribs at 20, stringers at 22) as a reversible method of connection to easily replace parts in the event of a repair. Furthermore, steel, titanium, aramides and carbon fiber plastics are well known materials in the art, and it would have been obvious to a person of ordinary skill in the art at the time of the invention to construct both the nut and bolt of Lea in view of Munk out of a carbon fiber reinforced plastic because it is both stronger and lighter than steel.

Claims **4-6, 8-11, 14, 15, and 25-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lea in view of USPN-6000107 to West.

Lea fails to teach many specifics of the attachment element, including a casing around a core element, truncated cone bodies, or retention flanges in addition to retainers.

However, West teaches an insulation pin (fig. 1),

having an elongated cylindrical core element (fig. 1, at 16) and a flange-like elevation formed at each end of the core element (fig. 1, at 22 and 24: on left and right ends of the core element as split down the centerline shown) and a casing formed around the core element (fig. 1, at 18) (claim 4);

wherein the core element is embedded in the casing made of a plastic-like material (fig. 1; col. 3, lines 50-56 describe it to be plastic or plastic-like) (claim 5);

wherein a flange extends radially out from a middle portion of the pin (fig. 1: there is a flange at 26 which extends out radially from a middle of the pin), and a plurality of pine-tree-shaped elevations are formed in the casing along the surface of the casing along the length of the pin, such that ridges formed by the pine-tree-shaped elevations are spaced apart from each other (fig. 1, pine tree elevations visible below the flange at 26 on the body of element 18, and spaced apart from each other and arranged down the length of the pin) (claim 6);

wherein the end region of the casing is dome-shaped (see fig. 1, tip of item 18), wherein the external shape of said end region has the shape of a paraboloid, and the branch end of the parabola is continued by a stepped gradation drawn inward radially in relation to the pin axis (see tip of item 18 in fig. 1) (claim 8);

wherein the core element is made from metal (see fig. 2; SS plunger pin is made of stainless steel), and the casing comprises a plastic having a much lower thermal conductivity than the thermal conductivity of the metal of the core element (col. 3, lines 50-56 allow part 18 to be made from nylon, which has a much lower thermal conductivity than stainless steel) (claim 9);

a second attachment element shaped as a truncated-cone body whose base area and cover area are implemented with insulation discs or ring elements which are designed so as to be “burn-through proof” (fig. 2a, second attachment element may be considered as item 30, which is generally in the shape of a truncated cone body, and may be considered to generally have disc or ring elements on the top and bottom sides; it is also made from nylon, which is flame resistant up to a particular temperature, which is considered "burn-through-proof" in the same way any fireproof material is only fireproof up to a particular temperature), being joined by a burn-through proof insulation jacket on the side of the disc margin or ring margin by a disc or ring of a larger external circumference (fig. 1; item 36 is a ring of larger external circumference and can be considered to join the external surface of the top and bottom rings of item 32) (claim 10);

wherein the cover area of the truncated-cone body comprises a first insulation disc (fig. 2a, bottom ring of item 30), with a hole formed in the middle portion of the first insulation disc (fig. 2a, there is a hole shown all the way through item 30), the diameter of the hole being less than the external diameter of the end region of the dome-shaped casing such that the second attachment element fits over the dome-shaped casing of

the first attachment element (the diameter of the hole is smaller than the inside edge of the dome at the tip of item 18, and the second attachment element fits on top of element 18, which constitutes fitting over the dome shaped casing) (claim 11);

wherein a disc-shaped core element is embedded in a casing (figs. 1, 2a and 2b, disc shaped core element at 40 is embedded in a casing at 38) (claim 14);

wherein the disc shaped core element is made from a metal and the casing comprises a plastic having a lower thermal conductivity than the metal of the disc shaped core element (fig. 2a: element 40 is made from stainless steel, and element 38 is made from nylon, nylon having a thermal conductivity much lower than that of steel) (claim 15);

wherein the pin is "burn-through-proof" (fig. 1, at 10: it has some temperature at which it fails, and up until that temperature it is fireproof, similar to any other fireproof material) and has retainers and retainer flanges on opposing retainer ends (fig. 2a: retainers at 36 and 18, flanges at 38 and the tip of item 16, retainer ends at top and bottom), the retainers covering holes in the insulation (in that they would be placed on the outside of the rib and interior panel of Lea, and cover the hole without actually touching it but still restrict access) (claim 25);

wherein at least a portion of the pin is encased in a plastic casing (figs. 1 and 2a: element 18 is made from nylon and encases a portion of the pin) (claim 26);

wherein the plastic casing includes a central flange disposed between the retainer ends and extending radially outwardly (fig. 1: element 18 has a central flange

which extends radially outwardly and is located between the two ends of the pin at 10, which is central in that it is located central to the entire pin element) (claim 27);

wherein the plastic casing defines a three dimensional shape having a plurality of pine-tree-shaped elevations on each of the first and second ends capable of retaining the retainers (fig. 1: pine tree shaped elevations clearly visible on the bottom end, for example at numeral 20; pine tree shaped elevations visible on the top end on element 30 - better seen in fig. 2a as the triangular protrusion - both elements 18 and 30 being made of nylon and being part of the plastic casing of the pin; the pine tree elevation on element 30 serves to retain the retainer at 36, and the pine tree elevations on element 18 serve to maintain the position of itself, whereby it may be considered to retain the retainer at 18) (claim 28);

It would have been obvious to a person of ordinary skill in the art at the time of the invention to replace the attachment elements of Lea with the attachment elements of West as a means to flush-mount the insulation to the ribs (West col. 1, lines 64-66) to predictably minimize the exposure area to a fire.

Claims **4-6, 10-12, 14 and 25-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lea in view of USPN-4805366 to Long.

These claims relate to an attachment element; Lea teaches an attachment element comprising a rod shaped spacer and washers or fasteners at either distal end (Lea fig. 1, at 30 and 32), the location of which has been previously discussed regarding the parent claims to which claims 4-6, 8-12, 14, 15 and 25-30 are dependent. Lea fails

to teach many specifics of the attachment element, including a casing around a core element, truncated cone bodies, or retention flanges in addition to retainers, but does indicate that various fastening techniques could be implemented with the insulation system of Lea (Lea col. 4, lines 5-7). One of ordinary skill in the art of fasteners seeking to implement a particular fastening system would have found it obvious to use the system of Long to connect the insulation of Lea to the ribs of an aircraft;

Long teaches a "burn-through-proof" attachment element (fig. 4), comprising:

first and second retainer ends at opposing ends of an insulation pin (fig. 4: retainer ends 51 and 52, pin at 15)

having an elongated cylindrical core element (fig. 4, at 15) and a flange-like elevation formed at each end of the core element (fig. 4, at 22 and 31) and a casing formed around the core element (fig. 2, between elements 36 and 15 is a layer comprising a material different from either 36 or 15, which is attached to element 15 as seen in figs. 4, 5 and may be considered a coating) (claim 4);

wherein the core element is embedded in the casing made of a plastic-like material (fig. 2, element between elements 36 and 15 is shown to be made of a plastic-like material) (claim 5);

wherein a flange extends radially out from a middle portion of the pin (fig. 4, at 33), and a plurality of pine-tree-shaped elevations are formed in the casing along the surface of the casing along the length of the pin, such that ridges formed by the pine-tree-shaped elevations are spaced apart from each other (fig. 4, at 41) (claim 6);

a second attachment element shaped as a truncated-cone body whose base area and cover area are implemented with insulation discs or ring elements which are designed so as to be “burn-through proof” (figs. 2-4, at 36: truncated cone shape visible in fig. 2, disc/ring elements visible in fig. 3, material shown in fig. 2 to be synthetic or plastic, which material is flame resistant up to a particular temperature, which is considered "burn-through-proof" in the same way any fireproof material is only fireproof up to a particular temperature), being joined by a “burn-through proof” insulation jacket on the side of the disc margin or ring margin by a disc or ring of a larger external circumference (fig. 3: a disc which is of larger external circumference than the inner portion joins the inner and outer segments) (claim 10);

wherein the cover area of the truncated-cone body comprises a first insulation disc (fig. 3, at 39), with a hole formed in the middle portion of the first insulation disc (fig. 3, in center of 39), the diameter of the hole being less than the external diameter of the end region of the dome-shaped casing such that the second attachment element fits over the dome-shaped casing of the first attachment element (figs. 3, 4: the diameter of the hole is smaller than the ridges of the casing at 41, and the second attachment element fits on top of element 15, which constitutes fitting over the dome shaped casing) (claim 11);

wherein the cover area of the truncated-cone body comprises a first plastic-like insulation ring of a larger circumference and a second plastic-like insulation ring of a smaller circumference (figs. 2, 3: first ring 62 is larger than second ring 39; both are shown to be of a plastic-like material in fig. 2), wherein on the interior diameter of the

first insulation ring and on the exterior diameter of the second insulation ring, several insulation braces, spaced apart on the circumference, are attached in vertical position (fig. 3: insulation braces at 61 are attached in vertical position, from a polar coordinate perspective) (claim 12);

wherein a disc-shaped core element is embedded in a casing (figs. 2, 3: disc-shaped core 39 is embedded in elements 61, and webs between 62, 61 and 39, which may be considered a casing) (claim 14);

wherein the pin is “burn-through-proof” (figs. 2, 3: element 15 has some temperature at which it fails, and up until that temperature it is fireproof, similar to any other fireproof material) and has retainers and retention flanges on opposing retainer ends (figs. 2-4: retainers at 36 and 38, flanges at 22 and 31, retainer ends at 41 and 52), the retainers covering holes in the insulation (in that they would be placed on the outside of the rib and interior panel of Lea, and cover the hole without actually touching it but still restrict access) (claim 25);

wherein at least a portion of the pin is encased in a plastic casing (fig. 2, between elements 36, 38 and 15 are separate layers which are shown to be made of plastic and may be considered a casing) (claim 26);

wherein the plastic casing includes a central flange disposed between the retainer ends and extending radially outwardly (figs. 2, 3, at 33) (claim 27);

wherein the plastic casing defines a three dimensional shape having a plurality of pine-tree-shaped elevations on each of the first and second ends capable of retaining

the retainers (fig. 4: pine-tree shaped elevations at 41 retain the retainer 36 and pine-tree shaped elevation 33 retains the retainer 38) (claim 28);

wherein both retainers are comprised of a disc having a central hole and first and second opposing surfaces and a shaped flange extending from the disc in the direction of one of the surfaces (figs. 3, 4: disc may be the disc comprising elements 39, 62 and the webs therebetween, whereby a shaped flange 62 extends from a first surface at the exterior of the ring 62 to a second surface 39) (relevant to claim 29); and

wherein a surface of the shaped flange of the retainers is formed in the shape of a parabaloid (element 62 is circular in shape, and the front inside corner is a circle in the shape of a cross section of a circular paraboloid) (relevant to claim 30).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the attachment system of Long in the insulation system of Lea to predictably mitigate thermal short circuiting (Long col. 2, line 63 – col. 3, line 6).

Moreover, though Long fails to teach that the shaped flange and the disc of claim 29 are of differing materials, choosing differing materials for the ring 62 and the webs between 62, 61 and 39 is considered an obvious design choice that could be arrived at through routine experimentation of one of ordinary skill in the art as a matter of optimization of aerodynamic performance, and absent any unexpected results, it would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the webs out of another material, such as a cheaper and lighter plastic, since they are not as load bearing and money and weight savings are desirable in aircraft construction. (claims 29, 30).

Response to Arguments

Regarding the term, “CFK”, the patent USPN-7186360 to Benitsch cited in the IDS dated 10/8/2008 does not with any specificity describe a particular well known material that CFK comprises. On the contrary, Benitsch suggests that the term CFK is not used to describe a specific material, but rather an entire class of carbon fiber reinforced plastics (Benitsch col. 1, lines 44-45). In this sense, "CFK" is an acronym for *Carbon Faserverstärkte Kunststoff*, which is the German term for carbon fiber reinforced plastic. It would generally be proper to claim that a particular structure in a claim is made from a carbon fiber reinforced plastics material. However, the use of acronyms in a claim may fail to particularly and distinctly point out the limitations of the invention when there are other acronyms that share the same letters. For example, CFK in Dutch actually refers to chlorofluorocarbon. USPN-6777103 uses CFK in the claims to refer to copper chromium fluoride (col. 15, line 46) and USPN-6122387 uses CFK to refer to "carbon fibre kevlar” (col. 1, line 53), though both of these examples preface the acronym with the full name, preempting any possible confusion with other meanings of the term CFK. Additionally, it does not narrow the scope of the claim to recite "carbon fiber reinforced plastic" in the claim in place of “CFK”, excepting that only the intended meaning is claimed. Since the use of the term CFK by itself without introduction is not considered essential to particularly pointing out the limitations of the claim, and in fact may introduce more confusion without an introduction than with, the objection to the claims remains outstanding. Applicant is requested to at least amend the claim to read

"carbon fiber reinforced plastic (CFK) material" or, "CFK (carbon fiber reinforced plastic) material".

Regarding the weight of materials on airplanes, it cannot be said that a primary reference inherently teaches away from replacing existing elements with heavier elements merely because of weight concerns on an aircraft. The use of steel in attachment posts is well known and established in the art and its implementation over plastic would merely reduce the fuel efficiency of an aircraft, and not critically damage its performance.

A number of other limitations are generally declared to be absent from the applied art; hopefully the present rejections will more clearly point out where these limitations exist in the prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard R. Green whose telephone number is (571)270-5380. The examiner can normally be reached on Monday - Thursday 8:00 am - 6:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rob Swiatek/
Primary Examiner, Art Unit 3643
14 January 2009

/R. R. G./
Examiner, Art Unit 3644